



JAMES MCKENZIE INSTITUTE
R. CLINICAL RESEARCH
ST. ANDREWS, FIFE

ROYAL BURGH OF ST. ANDREWS

REPORTS

BY THE

Medical Officer of Health

Veterinary Inspector

AND

Sanitary Inspector

For the Year 1926.

867



To the Scottish Board of Health, The Provost, Magistrates and
Town Council of the Royal Burgh of St. Andrews.

Gentlemen,

I have the honour to present, in compliance with the requirements of Section 15 of the Public Health (Scotland) Act, 1897, the Report on the Health of the Burgh of St. Andrews for the year 1926, in submitting which I avail myself of an opportunity of acknowledging the ready support and valuable assistance rendered by all those associated with me in the health activities of the Burgh.

I have the honour to be,


Gentlemen,

Your obedient Servant,

G. MATTHEW FYFE, M.B., Ch.B., D.P.H.,
Medical Officer of Health.

July, 1927.

Public Health Department,
St. Andrews.



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ANNUAL REPORT, 1926.

A popular slogan, expressive of the general aim of public health organisations to-day, would be—communities free from the expensive burden of preventable disease. In every great city public health departments controlling comprehensive agencies for the prevention and treatment of disease are now in existence. Clearly, schemes involving the installation of officials, doctors and nurses, and the development of many auxiliary institutions must make increasingly serious calls upon the purse of the ratepayer. But the grumbling ratepayer, if, in this connection, he exists, has been largely silenced, for the experiences of the last decade have undoubtedly led all thoughtful citizens to see the necessity and importance of well-devised and truly effective schemes of National Health. Such schemes indeed, have already proved their worth and have come to stay, their practice in effect, being little short of the nucleus of a state medical service. Whatever may be the political outcome, the world of to-day is witnessing disease successfully resisted and often defeated in a manner never before achieved or even contemplated. These part victories, however, are but preliminary skirmishes; medical science has yet to reconnoitre a wide and unknown territory before the activities of disease can be brought under more or less certain control.

Indubitably only the larger cities can afford to maintain communal health services. Deterred by the excessive taxation which would almost certainly result, most of the smaller towns and burghs have failed to provide similar municipal facilities for the welfare of their citizens. Accordingly, a system of centralisation of services is developing, wherein one large institution or group of institutions is available for large areas, the argument being that in these days of increased transport facilities distance is no great drawback. Admirable though such a scheme is, it does not, however, meet with the entire approval of the inhabitants of smaller towns. Patients and their relatives will always object to removal to a distance from home, their unwillingness increasing in direct proportion to the distance. Of course, if the ultimate

wellbeing of the sufferer is assured, such an objection can be set at naught. In certain districts, however, an element of very definite risk is encountered in transport, for the strain of a journey, either by road or by water, may endanger life. Medical men, under these circumstances, are confronted with a serious problem in deciding whether it is wise to despatch a patient to the central institution or to utilise what means are available locally. As a rule the outcome is the appearance of a specialist, at a fee, at the home of the patient, rather than an acceptance of the central facilities. Of first importance although the welfare of patients certainly is, there is another side of the question of centralisation which demands equally careful consideration, namely the cost of participation in such a scheme. The experience of the local authorities of certain of the smaller burghs is that the financial commitment involved is quite out of proportion to the total benefits received, even when every advantage is taken of the facilities provided by the central organisation. Schemes of centralisation of services, then, do not necessarily confer unmixed benefits upon smaller communities.

Viewing in its widest aspect, however, this modern tendency towards communal hospital services and specialism, perhaps the most unsatisfactory features are the deterioration, which must ensue, in the worth of the general practitioner, and the exit of the family physician. The general practitioner of to-morrow need not trouble himself greatly to diagnose the nature of a patient's illness, nor need he concern himself with any treatment requiring special skill. Practically his sole duties, apart from prescribing liniments and cough mixtures for the minor ailments of his patients, will consist in determining whether or not he should send them to hospital for observation when he cannot himself make diagnosis, or for treatment when he is unwilling himself to undertake treatment. It may be averred that in thus handing over his responsibilities he is shirking his duty to his patients, but such is not the case. With well equipped hospitals and numerous specialists at his service, it is only right in the interests of his patients that he should avail himself of these facilities, especially when they may be secured free of charge. The effect of such a general course of action will be seen, not so much in an extraordinary fall in the incidence of disease as in a

regrettable decline in the clinical acumen of the general practitioner. In this lies, probably, the greatest drawback to municipalisation and centralisation of services as at present conceived, since it is to the general practitioner and to the general practitioner alone that there is given the opportunity to observe patients in health and in disease, and so to obtain the key to the fundamental problem of medical practice—the recognition of the early symptoms of disease on which are based the principles of preventive medicine. It is not the specialist, not the public health official, but the general practitioner who is, therefore, the true custodian of health. It may be argued that the general practitioner has had his innings and has achieved little, but it may be equally well affirmed that neither in pre-graduate nor in post-graduate days has he been trained, in hospital ward or lecture room, to recognise the earliest signs of disease and that, therefore, he has not failed but has never been tried.

It is such criticisms as have been outlined in the foregoing paragraphs that have determined public health policy in St. Andrews. St. Andrews is a burgh with a population of about 10,000 realising less than £400 by the imposition of one penny on the rates. It occupies an isolated position, separated from the large hospitals of Edinburgh and Dundee by broad estuaries. Its inhabitants are in spirit typically conservative and resent having their sick removed beyond the confines of the Burgh. Such geographical, financial and sentimental objections to sharing central medical services with other towns and districts would, however, carry little weight were it not for the existence within the Burgh of facilities which have been used and are being utilised increasingly to serve the needs of the inhabitants. The town is fortunate in possessing excellently equipped hospital and nursing accommodation and in having access to the consulting rooms and extensive laboratories of the James Mackenzie Institute for Clinical Research. Influenced more especially by the presence of the last, the Burgh is conducting its own health service and has determined to remain more or less independent of outside resources.

It is only just to place on record that, in the opinion of those who are competent to judge, not only from the national but also from the international point of view, the result has been the

creation of a public health organisation which in several respects is considerably in advance of that of any Burgh of equal size and indeed of that of most large cities. The system, described in the introductory paragraphs of the Medical Officer's Report for 1925, wherein, under the Child Welfare Scheme, a child is continuously "followed up" from infancy to school age, is kept under observation during school years, the Medical Officers of the Education Authority adding to the previous records stored in the Clinical Institute, and finally passes into the panel or private practice of a general practitioner who continues to add to the records, is an achievement of no mean order and has resulted in the compilation of a dossier in health and in disease of over 80 per cent. of the younger citizens of the Burgh. This merging of public health services with panel and private practice is, we believe, unique, and has resulted from the close collaboration of all the medical men of the Burgh in the work of the Clinical Institute where the valuable records which have accumulated are being made use of for purposes of research and are not confined to strong rooms and neglected from year to year as is the general fate, we learn, of the case cards laboriously compiled under panel practice regulations.

One of the more pleasing effects which have been produced by the local policy has been the removal of that barrier of suspicion which too commonly exists between general practitioners and public health officials, due, almost entirely, to the fact that the active collaboration of the doctors is cultivated and achieved in all possible schemes, and that the creation of specialist officials is largely avoided although the services of an expert consultant can always be had when necessary. For instance, there has been completed a scheme for the ante-natal supervision of expectant mothers, in which all the notes and physical examinations are made by the practitioners of the town and not by a single individual, all parturient women of whatever status being free to consult the doctor of their own choice and each midwife being instructed to urge their attendance. In this way, it is firmly believed, ante-natal consultation will become the habit of all expectant mothers instead of, as at present, the inclination of a comparative minority. Clearly the doctors themselves will be the gainers by the information so derived. Further material, too, will be added to the records of the Clinical Institute and the

Public Health Department will thereby gain by being in a position to achieve more surely one of the purposes of its existence—the lowering of maternal and infantile mortality.

STATISTICAL COMMENTARY.

Population.

The population of the Royal Burgh of St. Andrews, as estimated to the middle of 1926 was 9837, as compared with 9726 in 1925, indicating an increase of 111. Prior to 1925 the Registrar General had used a method of estimation based on the assumption that the population varied directly with the number of houses occupied in the Burgh. Since 1925, however, the Registrar General has calculated the population by adding the excess of births over deaths and adding or subtracting the gain or loss due to immigration or emigration. The excess of births over deaths for 1926 was 28 so that, during the year, 83 persons had settled in the Burgh.

Births.

The total number of births (including illegitimate), corrected for transfer in and transfer out, was 117, of which 59 were male and 58 female.

The birth rate per 1000 of estimated population was 11·4, an increase on the rate of the previous year by 1·4 and a slight increase on the average figure for the decade 1916-25, which was 11·36. Illegitimate births numbered 6, representing 5·1 per total 100 births. There were 4 still births.

Marriage Rate.

Forty-four marriages were registered, representing a rate of 4·5 per 1000 of estimated population. Figures for 1925 were 58 and 6 respectively.

Death Rate.

Corrected for transfers, the number of deaths from all causes was 89, of which 42 were males and 47 females, the rate per 1000 being 9, a figure lower by 2·4 than the birth rate, by 1 than the rate for 1925, and by 2·1 than the average rate for the past ten years. The tuberculosis death rate was 0·30 per 1000, a figure less than half that of the previous year. No deaths were due to any of the principal epidemic diseases, *i.e.*, enteric fever, measles, scarlet fever, whooping cough and diphtheria.

Infantile Mortality.

The number of infant deaths continues to decline steadily, the figure for 1926 being 43 per 1000 births as compared with 52 in 1925. No better criterion of the value of the Mother and Child Welfare Organisations could be obtained than the steady lowering of infantile mortality since 1922 when the scheme was fully established as a functioning unit. The rates for these past five years have been :—

<i>Year.</i>	<i>Infantile Mortality.</i>			
1922,	80
1923,	68
1924,	76
1925,	52
1926,	43

The causes of deaths in infants during 1926 were broncho-pneumonia, congenital heart disease, syphilis and injury at birth.

The following is the Registrar General's Table showing the causes of death in St. Andrews at various age periods :

No.	Causes of Death.	All Ages		Age													
		Both Sexes	Males	Females	-1	1-5	10-15	25-35	45-55	65-75	85 & over						
1.	Influenza,	2		2						2							
2.	Epidemic Diseases, ..	2	2				1			1							
3.	Tuberculosis of Respiratory System,	3		3			1	1									
4.	Malignant Tumours, ..	16	6	10					1	4	6	3	2				
5.	Meningitis (not Cer. Spin. or Tuberc),	1	1						1								
6.	Apoplexy,	13	7	6					2		6	2	3				
7.	Heart Disease,	14	6	8					1	1	1	3	5	3			
8.	Diseases of Arteries, ..	4	1	3									2		12		
9.	Bronchitis,	2	1	1	1						1						
10.	Pneumonia (all forms), ..	5	2	3		2						3					
11.	Appendicitis,	1		1		1											
12.	All Diseases of Liver (not Malignant),	1		1						1							
13.	Diseases of Early Infancy and Malformations,	3	1	2	3												
14.	Other Violent Deaths, ..	6	3	3			1			1	1	1	2				
15.	Other Defined Diseases, ..	16	12	4	1						4	3	5	3			
All Causes,		89	42	47	5	3	2	2	1	7	11	23	22	13			

Diseases of the heart and blood vessels continue to cause the majority of deaths in the Burgh, 35 per cent. of the total deaths having been due to fatal lesions of the circulatory system. Cancer is next with 18 per cent., Bronchitis and Pneumonia claim 8 per cent., while Tuberculosis accounts for 3 per cent. There was an increase in the number of fatal accidents during the year, the percentage rising from 3 to 7 per cent. It is noticeable that more women than men died from diseases of the respiratory system and from cancer, and that all the tuberculosis deaths were in women. That the citizens of St. Andrews, however, are essentially a healthy and long-lived people is significantly indicated in the tables classifying deaths according to age periods; 65 per cent. of deaths from all causes occurred in persons over 65 years of age; 21 per cent. of the deaths occurred in the age groups 25 to 65 years, while 14 per cent. were in young persons below the age of 25. Broadly speaking, then, there are two periods at which the incidence of death is greatest in the Burgh namely in infancy and in old age, the forty years that elapse between the spring time and the autumn of life being singularly free from casualties.

ENVIRONMENTAL CONDITIONS.

Sanitary Conditions.

Place of beauty and resort although St. Andrews now is, it is within living memory that at one time, indeed less than ninety years ago, "there was not a foot of side pavement in any of the streets; filth and squalor abounded unchecked; cows and pigs grazed in front of the colleges; the venerable ruins were fast going, by neglect, to decay and were littered with rubbish; the lines of the public streets were continually broken by awkward abutments of ungainly houses, and, generally, St. Andrews was at the lowest pitch of miserable neglect and decay." To-day, however, with its wide streets and general atmosphere of cleanliness, the town bears no resemblance to the description of less than a century ago, but still there do remain remnants of bygone insanitary days. Studded here and there are buildings, some of them inhabited, some of them derelict, none of them historically or architecturally of value, which crumbling and more or less beyond repair, were better demolished to permit of the erection of new houses or the formation of open spaces in crowded areas. The attention of the Town Council was drawn to one

such erection—an ancient disused stable beyond repair and rat infested—and negotiations were entered into with the owners with a view to its demolition.

During the year a determined effort was made to diminish the rat infestation complained of, especially in the east end of the town, and referred to in the Report for 1925. The Medical Officer of Health and the Sanitary Inspector attended a Meeting of a Committee of the Town Council and representatives of the Shopkeepers' Association, and explained the menace to man, merchandise and property involved in the rat pest. A scheme was outlined and it was agreed that the Town Council and the shopkeepers of the Burgh combine financially in the appointment of an official rat catcher to work under the supervision of the health department. The rat catcher visited all places where rats or signs of the presence of rats were reported to exist, and laid traps and poisoned bait. By the end of the year no further complaints of rat infestation reached official ears.

The Burgh sewage system, although on the whole efficient, is not entirely beyond criticism. Sewage disposal in the low-lying areas which limit the west confines (Links area) of the town is occasionally upset in the summer months by storm overflows. Unfortunately, this area is practically at sea level, and its drainage system is liable to tidal influences resulting at times in obstruction to the flow of sewage effluent and flooding of property and grounds with noxious matter. The system of sewage disposal in the east confines (Woodburn area) of the town is distinctly in need of alteration. Remedial measures will be exceedingly costly and are at present under the consideration of the Burgh Engineer, certain suggestions of whom are referred to in the report of the Sanitary Inspector.

Faecal masses borne by certain tides from the main sewer outfall, referred to in the Report for 1925, continue to pollute the West Sands. It is proposed to approach the Town Council during the present year, requesting that adequate means be taken to prevent this nuisance, the cause of much unpleasantness and at times of considerable complaint on the part of bathers.

Atmospheric Conditions.

The sunniest month was May, during which there were 190·6 hours of sunshine equivalent to a period of 6·1 hours per day. The month with least sunshine was January when there were

28·9 hours of sunshine of 0·9 hours per day. The total amount of sunshine for the year was 1440·4 hours, an amount less by 89·8 hours than the amount for the previous year.

The warmest month was July, the highest temperature reached being 82°. The coldest months were January and February with temperatures of 35°. The mean temperature for the whole year was 47·8°, that of the previous year being 46·7°.

The driest month was December when there was a rainfall of 0·29 inches, while the wettest month was November when there was 4·29 inches of rainfall. The total amount of rainfall for the year was 34·76 inches, which was greater than the total amount for 1925, namely 27·05 inches.

The most prevalent winds were from the west and the least prevalent from the north.

Housing Conditions.

The total number of houses which will have been erected when the various Housing Schemes, inaugurated in 1920, have been completed, will be as follows :—

Two-roomed, 44 ; three-roomed, 108 ; four-roomed, 78 ; five-roomed, 12 ; total, 242.

At present there are on the files of the Housing Factor the following number of applicants for houses :—

Applicants for two-roomed houses,	..	..	157
Applicants for three-roomed houses,	..	..	75
Applicants for four and five-roomed houses,	..	..	30
			<hr/>
			262
			<hr/>

At the end of 1925, 162 houses had been constructed leaving, therefore, a balance of 80 houses to be erected to meet the need of 262 applicants.

There should be included in these figures an additional 14 houses which resulted from the reconstruction of two large buildings into 8 two-roomed houses, 5 three-roomed houses and 1 four-roomed houses.

One important means of measuring the success of housing schemes is their effect in the abatement of over-crowding. In 1923, Provost Sloan, in his report on a survey of the housing conditions of the Burgh, stated that there were then 70 over-crowded

houses. In December 1926, the Sanitary Inspector surveyed the houses of the Burgh and estimated that there were 49 overcrowded houses, none of the tenants of which had applied for new houses. So that, although at the end of 1926 two-thirds (67 per cent.) of the houses under the schemes had been erected, only one-third (30 per cent.) of the over-crowding had been relieved. There has not, therefore, been a decrease in the number of over-crowded houses proportionate to the increase in the number of new houses rendered available. That there are many overcrowded houses is not peculiar to St. Andrews, but is a misfortune shared by the majority of towns in the country, and the solution of the problem is much hampered by the inability of some inhabitants to afford the rents of better houses and by the contentment of others to continue to reside in insanitary quarters. That the housing question in the Burgh in this respect is still acute is emphasised by the fact that 16 per cent. of maternity cases visited or confined by the maternity nurses of the Burgh live in overcrowded houses. But while it is easy to prove that overcrowding exists, it is difficult to suggest how it may be circumvented. One is averse from the erection of tenement houses in St. Andrews, and, even if such were erected, it is doubtful if the individual families referred to could afford to live in them, and the Town Council in the interest of the ratepayers cannot afford to sacrifice business principles on the altar of charity. In view of the present state of affairs it is suggested, as the only apparent immediate solution that the Town Council makes it perfectly plain to all concerned that the relief of defective housing conditions is one of the primary objects of the Housing Schemes, and that although it is bound by no statutory obligation, it uses every persuasion to ensure that each house vacated for one of the new houses under the schemes be occupied by tenants who have come from a defective, an overcrowded, or uninhabitable house, even to the exclusion, except under extraordinary circumstances, of those applicants who reside in houses which are perfectly suitable for them, so far as their structure and cubic capacity per individual is concerned. It is probable that, thus, by an increased promotion of tenants in sequence to better houses, there will ensue an increased vacation of the type of house which, although at present inhabited, should be pulled down.

It is very significant that no demolition order has been served in the Burgh for years. Yet there are many ruinous houses still occupied, as becomes perfectly obvious in the course of a walk through certain parts of the town. Perhaps it is futile to speak of demolishing houses when there are no available dwellings in which to place evicted tenants. But the construction of 162 houses has resulted in the removal of a few tenants from ruinous buildings and surely it follows that, as they were ruinous and therefore unfit for human habitation, these buildings should have been demolished. However, no recent systematic count of the number of ruinous houses in the Burgh has been taken, and conclusions drawn from casual observations tend to be somewhat inaccurate. The fact that the great majority of buildings which are defective or uninhabitable belong to private proprietors, renders the question of demolition a difficult one, since it seems that the Town Council can gain control only at the cost of exorbitant expenditure on purchase. While it is admittedly incumbent upon a Town Council to provide improved housing conditions for the citizens of a town, an equal responsibility rests upon the citizens to see that the Town Council has reasonable facilities for so doing.

Offensive Trades.

The offensive trades in St. Andrews are concerned with slaughtering of cattle, hide factoring and gut and tripe cleaning. No new applications for the establishment of offensive trades were made during the year. The offensive trades are carried on, in the Burgh, in a single premises situated on the south-west side of the town and are kept under regular supervision by the Sanitary Inspector. The report by the Veterinary Inspector of the Burgh deals with the facilities provided and the arrangements obtaining in these premises, and calls attention to certain structural and other defects.

Water Supply.

As years pass the consumpt of water per head increases. The figure of 62·35 gallons per head reported on by the Water Engineer for 1925 was exceeded in 1926 by 7·2 gallons—the maximum consumpt being in July (77·5 gallons) and the minimum in November (66·7 gallons). Excellent, although the principles of a copious supply of water is, its advantages are somewhat tempered if the

quality of the water is below standard. Following upon complaints lodged on the latter count, an intensive investigation of the Burgh's water supply was undertaken in the laboratories of the Clinical Institute, bacteriological examinations of samples of water being made daily and then weekly during July and fortnightly during the remaining months of the year. In the course of the investigation it became abundantly evident that although chemically the water was comparatively satisfactory, the nitrates varying between 0 and 1.28 parts per million and the albuminoid ammonia between 0.102 and 0.234 parts per million, bacteriologically, on the other hand the water was very unsatisfactory, *Bacillus Coli Communis*, an organism of intestinal origin, being invariably present in 1 cubic centimetre of water in both presumptive and confirmatory tests. These results were confirmed by Mr. A. Dargie, Public Analyst for St. Andrews and by Dr. D. W. Berry, Lecturer in Public Health Bacteriology, Aberdeen University.

Consultations were held with the Water Engineer who agreed that the situation should be met by the provision of additional filter beds (it being obvious that the existing filters were being overtaxed), by renovation of the existing filter beds, by checking wanton waste of water in the Burgh and by generally safeguarding against possible sources of contamination in the catchment area. These proposals were submitted to the Town Council by the Burgh Engineer, and at the end of December the following statement was prepared by the Medical Officer of Health for submission to the Town Council.

St. Andrews Water Supply.

In sequence to the Report of the Burgh Engineer on a proposed extension of the present civic filter works there has been prepared the following statement regarding—

- (a) The Nature of Source of the Burgh's Water Supply.
- (b) The Effectiveness of the Present System of Purification.
- (c) Probable Effect of the Alterations recommended.
- (d) The Question of Fishing on the Reservoirs.

A. The Nature of the Source of the Burgh's Water Supply.

The ultimate source of the water supply of the Burgh is surface water drained from an area of some 3000 acres of highly cultivated land on which farm steadings are numerous.

From the way in which this water is exposed to impurities and on account of the fact that it is scarcely possible to obtain such a large quantity of surface water as the Burgh requires, free from pollutions with human and animal wastes, it is very urgent indeed that every effort should be made to guard against contamination not only in the catchment area but also in the impounding reservoirs, and that measures for purifying the collected waters should be thoroughly effective.

The policy of the Town Council of purchasing land will go far in effecting security in the catchment area provided a rigid supervision is maintained of the areas under control, including the farms, dwellings and streams situated therein, all of which is within the capabilities of an efficient one-man patrol. The fact that the water collected in the three impounding reservoirs of the town is drained from land which is moderately populous with farm dwellings, grazed upon by cattle, and is in the main highly manured, would seem to indicate that these reservoirs were seething with pollutions and infections. And so to a certain extent they are; but when water is stored, as is the water in these basins, most bacteria which are harmful to man die a natural death, while those which escape would be, almost entirely, removed subsequently by any effective means of filtration.

B. Effectiveness of the Present System of Purification.

The waters in the reservoirs of the town, then, being naturally highly contaminated and therefore open to suspicion should be purified before use as completely as is possible. The process of storage, as has been stated, kills a great number of these bacteria which are dangerous to man but numbers of them pass on. Were air allowed to mix with the water after it leaves the reservoirs many more germs would be accounted for, but with the exception of a series of cascades in a natural stream extending from Lambie-letham Reservoir to the Meadow Burn practically the entire supply is in sealed pipes from the moment it leaves the reservoirs. *So that St. Andrews has to depend almost entirely upon filter beds for the purification of its water supply.*

The filter beds, as they are at present, are far from satisfactory. Intensive investigation of the bacteriology of water drawn from taps in the Burgh has been made during a period extending from July of this year to date. Organisms, presumably of intestinal

origin, have been found always in 5 c.c. of water, frequently in 1 c.c., whereas a good water should show none in 50 c.c. preferably none in 100 c.c. It has been accepted as a standard that not more than 100 germs per c.c. capable of growing in Gelatine should leave the filters. 1000 per c.c. was found to be quite a usual number. On one occasion the City Analyst reported 1170. Apart from bacteriological examinations, however, evidence has not been wanting from other sources. Frequent complaint has been made of the amount of gross particles retained in house filters, of solid masses issuing from taps in houses wherein no origin could be traced in the water system. In short, it is a matter of urgency that immediate steps be taken to improve the condition of the water. That the population seemingly has escaped a water-borne infection for the past few years is no reason for presuming that it will be immune for years to come.

D. The Question of Fishing on the Reservoirs.

The question of fishing on the reservoirs resolves itself into a consideration of the possible effect of contamination of the water supply by a carrier of an infectious disease, innocent or otherwise. Storage, as has been stated, serves to kill most pathogenic organisms but with the water disturbed by the passage of boats and by the movement of waders (few though they may be) during the months when maximum amounts of water are being withdrawn from the reservoirs, it is probable that the period of storage is very much reduced and possibly certain volumes of water pass from the reservoirs much earlier than should be. Nevertheless, efficient filtration will remove 99.5 per cent. of organisms from an unfiltered water, so that if a specific infection should have occurred, while there is a chance of a few germs finding their way through, the chance is a very small one. Therefore, provided defences are sound, the risk accruing from the practice of fishing on the reservoirs, though present, is little, provided common decencies are observed in the matter of fouling the water by offensive acts or bait.

The present filter beds, however, do not remove 99.5 per cent. of organisms from the waters of the impounding reservoirs. Experiments, not yet completed, are being made with a view to ascertaining the percentage of organisms retained by the filters, and it would seem that, at a rough estimate, hardly 50 per cent. are retained. The filters are inadequate to deal with the demands

made upon them at quiet periods of the year, and are therefore all the more insecure during the fishing season which coincides with the months when the greatest strain is placed upon the beds.

St. Andrews is in a unique position regarding the question of fishing in its reservoirs because of the lack of facilities for aeration of its water supply, and, in the meantime, of facilities for adequate filtration, so that it is not to be compared with other places where fishing is permitted in municipal waters.

HOSPITAL FACILITIES.

The Hospital facilities of the Burgh were reviewed in detail in the Report for 1925. They may be summarised as follows :—

City Hospital—Infectious Diseases.

Memorial Cottage Hospital—General Medical and Surgical Treatment.

Home of Rest—Occasional Maternity cases .

Williamstead Hospital, Guardbridge—Smallpox.

Glenlmond Sanatorium—Tuberculosis.

Thornton Infectious Diseases Hospital—Ophthalmia Neonatorum.

Although it does not provide for citizens of the Burgh, there should also be mentioned St. Leonards School Seniors Children's Convalescent Home, which is available for boys of from 4 to 6 years of age and for girls of from 4 to 12 years of age, convalescent from non-infectious diseases acquired in the larger cities of Scotland. There is accommodation for twelve children in the winter months and for fifteen children in the summer months. The usual stay in the Home is for a period of from one to three or four months. No treatment is undertaken, the Hospital being maintained purely for purposes of convalescence. There is a large airy ward and adequate side-room accommodation. Although managed by a very small staff, the hospital is a model of cleanliness and efficiency.

INFECTIOUS DISEASES.

As the result of an outbreak of dysentery, the incidence of infectious diseases in the Burgh during 1926, was much increased. 136 notifications were made to the Medical Officer of Health, but, as will be explained under the section on dysentery, this figure does not represent the total incidence ; 18 cases were removed to

Hospital and 118 were treated in private practice. The number of cases, classified according to disease, treated in Hospital, was as follows, the average stay of patients in the City Hospital being 27 days :—

	City Hospital.	Other Institutions.
Scarlet Fever (including one case notified in 1925),	5	—
Diphtheria,	5	—
Acute Primary Pneumonia,	—	1
Pulmonary Tuberculosis,	—	1
Non-Pulmonary Tuberculosis,	—	1
Tonsilitis (for observation),	5	—
Suspected Typhoid Fever,	1	—
	—	—
Total,	16	3
	—	—

The total number of cases in the Burgh, classified according to disease was as follows :—

Scarlet Fever,	4
Diphtheria,	5
Erysipelas,	1
Ophthalmia Neonatorum,	2
Dysentery,	116
Acute Primary Pneumonia,	2
Acute Influenzal Pneumonia,	1
Pulmonary Tuberculosis,	3
Non-Pulmonary Tuberculosis,	2
	—
Total,	136
	—

Scarlet Fever

All the four cases which occurred in the course of the year were of mild type. Clinically they presented definite signs of the disease and all gave a positive Dick reaction during the first few days of illness and a negative reaction in convalescence. Chicken-pox developed in two of the cases while in Hospital, one of them having been admitted during the incubation period of that infection. The recovery of another of the cases was complicated by the appearance of a mastoid abscess which was successfully operated upon by Dr. N. McLeod, under general anaesthesia. The fourth case recovered uneventfully.

Diphtheria.

Only five cases of diphtheria occurred during 1926 as compared with 21 in 1925. The Klebs Loeffler bacillus was isolated in each case, none of whom was severely ill. One of the cases was a healthy carrier discovered in the course of routine examination of the children in St. Leonard's Convalescent Home. After intensive local antiseptic treatment, the diphtheria bacillus was not detected in numerous examinations of brushings from the throat, and the child was sent home to Glasgow.

Scarlatina and Diphtheria Immunisation.

Every opportunity was taken during 1926 of advising protective inoculations against scarlet fever and diphtheria, but the low incidence, especially of diphtheria, and the mild character of both diseases during recent years have given rise to a general feeling of security against and contempt for infection, thus rendering measures for protection difficult to organise. Nevertheless, a little headway has been made. The Town Council has advised the immunization of all dairy workers, whereby it is hoped that the milk supply (one of the most dangerous carriers of scarlet fever and diphtheria) will be rendered safe. An experiment was undertaken to ascertain the relative susceptibility to scarlet fever of children residing in St. Leonards School for Girls and of children residing in the Burgh, and it was found that 96 per cent. of the School girls (age period 9-19 years) and 55 per cent. of the Burgh children (age period 4-19 years) were susceptible as ascertained by a positive reaction to the Dick test. This increased susceptibility of children residing in private schools, as compared with children less confined, is in keeping with what has been found elsewhere. During the year 31 persons were tested for susceptibility to diphtheria (Schick test) and of these 10 received protective inoculations.

Ophthalmia Neonatorum.

Two infants, less than twenty-one days old, with discharge from the eyes, were reported in terms of the Regulations. There was no evidence of a gonorrhoeal infection in either.

Dysentery.

An epidemic of dysentery occurred in September. The attention of the Medical Officer of Health was first directed to the situation by the occurrence of an outbreak of diarrhoea in one of the hotels

of the Burgh, whereupon inquiry among the medical practitioners revealed that a condition of vomiting, diarrhoea and collapse was rife throughout the town. It was very soon established that the great majority of persons suffering had consumed milk supplied from a certain dairy premises situated outwith the Burgh. At this farm it was found that two children of the farmer and at least one of the milkers, were suffering from a disorder of similar nature to that prevalent in St. Andrews. From a list of customers supplied by the farmer, it was ascertained, at that time, that 23 houses supplied directly by the farmer and 20 houses supplied indirectly through retailers of his milk, were infected. On the complete isolation of the ailing milker in Hospital, the infection in the Burgh came to an end. No evidence of infection resulted from investigation of the milk supply of dairy farms and of other food supplies within the Burgh. *B. dysenteriae* Sonne was isolated from the stools of the greater number of infected persons while the same organism was agglutinated by the blood serum of an appreciable number of cases. These bacteriological findings were later confirmed by Dr. A. Gardner, Standards Laboratory, Oxford University, and by Dr. J. Smith, City Bacteriologist, Aberdeen.

In all 116 cases, living in 73 different residences were notified under the Infectious Diseases (Notification) Acts. Of these, 103 persons were supplied with milk, directly or indirectly, from the infected farm. These figures, however, do not indicate the total incidence. Some persons were so slightly inconvenienced by the infection that medical advice was not sought (a feature of Sonne dysentery). At a rough estimate, based upon cases brought to the notice of the Medical Officer of Health from various lay and professional sources, some 80 houses and 150 persons were infected, although it is conceivable that even a figure of 200 persons would not be an over estimation.

None of the cases died. Although some were very severely ill, two cases only gave rise to anxiety, both of them adults.

No cases were admitted to Hospital. From the first it was judged that the disease, although highly infectious, was but mildly contagious, a presumption that was afterwards borne out when only 13 cases of infection by contact were notified. In the opinion of the Medical Officer of Health, Hospital accommodation

for infected cases would have involved the Town Council in heavy expenditure and might have aroused a feeling of considerable perturbation in the minds of the population and anything in the nature of a panic was what he was most desirous of avoiding.

A detailed description of the epidemiology and bacteriology of the epidemic has been published in the *Journal of Hygiene*, XXVI. 3, 1926.

Pneumonia.

In the course of the year there were two cases of acute primary pneumonia, one of which was treated in the Cottage Memorial Hospital, and one of acute influenzal pneumonia, an elderly woman who died at home after seven days' illness.

Tuberculosis.

The Tuberculosis Register was revised at the end of the year in order that an accurate measure might be made of the prevalence of tuberculosis in the Burgh. The following are particulars of all cases retained on the Register as suffering from active disease at the end of 1926 :—

Case.	Site of Disease.	Age on Notification.	Sex.	Occupation.	Remarks.
1	Lungs.	23	F.	Housewife.	No Sanatorium treatment.
2	Lungs.	36	F.	Housewife.	„
3	Lungs.	32	M.	Clubmaker.	„
4	Lungs.	44	F.	Housewife.	„
5	Lungs.	49	M.	Mason.	„
6	Lungs.	44	M.	Mason.	„
7	Lungs.	47	M.	Mason.	„
8	Lungs.	24	M.	Clerk.	„
9	Lungs.	27	M.	Clubmaker.	„
10	Abdomen	5	M.	—	Hospital treatment.
11	Vertebral Column.	64	M.	Gardener.	Home treatment.

There were at the end of the year 9 cases of pulmonary tuberculosis, 6 of them men and 3 of them women, and 2 of non-pulmonary tuberculosis, both of them males. Classification according to age at notification is as follows :—

<i>Age Groups.</i>	<i>Number of Cases.</i>
5—15 years.	1
15—25 years.	2
25—45 years.	5
45—65 years.	3

This age incidence is in accordance with the generally accepted opinion that respiratory cases are most numerous at the age period 15—45 years, the two non-respiratory cases reported, belonging to the previous and the following age periods. The almost entire absence of tuberculosis of any type amongst the juvenile population is a remarkably creditable reflection on the well-being of the children. The disinclination of those who suffer from tuberculosis to undergo sanatorium treatment is to be deplored. During the past ten years only a few persons have, at an early stage of the disease, availed themselves of this, the only rational means of treating their complaint. It seems, unfortunately, that it is only the onset of the last incurable stages of the diseases which provokes a desire for sanatorium treatment. Of the three persons who died of tuberculosis during 1926, two were admitted to Glenlond Sanatorium in a hopeless condition and died there, the other never had sanatorium treatment. It does not seem to be realised that the training in routine of life and the habits acquired in sanatoria have done more to prolong life and defeat the disease than all the drugs so far devised by science. It is significant that 40 per cent. of all the cases notified in the Burgh since 1917 are now dead.

Tonsillitis.

Five cases of tonsillitis were admitted to the City Hospital in 1926 for observation, scarlet fever or diphtheria having been suspected. Clinical examinations and bacteriological tests for these diseases, however, were negative and the patients were discharged within a few days.

The ordinary sore throat has been by far and away the most prevalent infectious disease in the Burgh during the year. Two distinct epidemics occurred and it is thought that about a quarter of the population were infected. No origin could be traced of the first outbreak which occurred early in the year. The second outbreak, however, was definitely milk borne, and was traced to a girl in a dairy shop who continued to sell milk and handle utensils for a week while suffering from an attack of follicular tonsillitis. Three days had elapsed before the attention of the Health Department was directed to the outbreak, at which time it was ascertained that the majority of infected persons had consumed milk

supplied from the dairy shop. Prompt isolation of the girl removed the original source of infection, but contact infections continued to occur for some time.

Typhoid Fever.

No cases of typhoid fever occurred in 1926. One girl was admitted to the City Hospital on suspicion, but further clinical and laboratory examinations gave negative results.

Veneral Diseases.

The following is a resume of the incidence of veneral diseases in the Burgh, the figures having reference to the number of cases seen by the medical practitioners for the first time during 1926.

Syphilis.—24 cases of syphilis, equally divided among the sexes, were met in general practice. Classified according to the type of syphilis, the cases were as under :—

Congenital,	..	..	..	..	13
Primary,	..	..	..	..	1
Primary (extragenital).	..	..	..	..	1
Secondary,	..	..	..	..	1
Tertiary,	..	..	..	..	5
Neurosyphilis,	..	..	..	..	3
					<hr/>
					24
					<hr/>

Late manifestations of the disease were more prevalent than early, a fact which probably accounts for the major incidence of congenital cases. These figures do not, of course, represent the total incidence in the Burgh.

Gonorrhoea.—7 cases of gonorrhoea were treated during the year, 3 of them males and 4 of them females.

Treatment.—All cases were treated either at home, or in the special clinic at Dundee or in the Clinical Institute. Five courses of salvarsan substitutes comprising 45 doses, were administered to patients by the Medical Officer of Health.

Laboratory Facilities.—Laboratory investigations were undertaken in Dundee under the conjoint scheme with the County or in the laboratories of the Clinical Institute. The blood of debilitated and other defective children attending the Child Welfare Clinics was examined at the Institute, routinely, by means of the Wassermann Reaction.

Cases attending Dundee for Treatment.—According to the report of the Medical Officer of the Treatment Centre 5 cases of syphilis, 1 case of gonorrhoea and 2 cases of conditions other than venereal, have attended from St. Andrews during the year 15th May, 1925 to 15th May, 1926. To these 63 doses of salvarsan substitutes were given. 49 vouchers for return railway tickets to Dundee were issued patients to facilitate attendance.

MATERNITY AND CHILD WELFARE SCHEME.

The following information has been compiled :—

Infantile Mortality.

The number of deaths which occurred in infants under one year of age was 5, representing a rate of 43 per 100 births calculated on the estimated population to the middle of 1296. As was indicated in the Statistical Commentary on deaths in the Burgh, the rate represents a further fall in the steady decrease which has ensued following the adequate establishment of the Scheme. According to age groups these deaths may be classified as under :—

- (a) Under one week—1 (9 per 1000 births).
- (b) Over 4 weeks and under 6 weeks—1 (9 per 1000 births).
- (c) Over 6 weeks and under 1 year—3 (25 per 1000 births).

According to the causes of death they may be classified as under :—

Congenital Heart,	..	..	..	1
Broncho-pneumonia,	..	..	..	2
Injury at Birth, ..	..	..	..	1
Syphilis,	..	..	..	1

Births.

The number of legitimate births registered and corrected for transfer was 111 comprising 56 males and 55 females. The number of illegitimate births registered was 6, 3 being males and 3 females. The total number of births notified to the Medical Officer of Health was 120, of which 78 were attended by doctors and 42 by midwives. There were 4 still births and one miscarriage. Twin labours numbered 3.

Maternal Mortality.

It is satisfactory to record that no deaths occurred in child-birth in the practice of either doctors or midwives.

Report under Midwives (Scotland) Act, 1915.

Three midwives gave notice under Section 18 of their intention to practice inside the Burgh. There were no cases of puerperal sepsis.

There were 12 cases of emergency necessitating the calling in of medical practitioners, as follows :—

Laceration of Perineum,	7
Delay in first stage of labour,	1
Delay in second stage of labour,	2
Persistent posterior position,	1
Condition of patient after delivery,	1

The calls for medical help were double those of the previous year, there being a noticeable increase in the incidence of perineal lacerations. All demands, however, were justifiable.

The satisfactory arrangement, reported upon last year, whereby two midwives are accommodated in the Child Welfare Centre, continues, one midwife being on duty at any one time. A third midwife was registered for the purpose of attending a single case. No indication of malpractice occurred in the Burgh and no investigation was called for. The hands, uniform, equipment and registers of midwives were inspected during the year by the Medical Officer of Health.

Home Visitations.

1. Infants—

- (a) Number of first visits, 97.
- (b) Number of re-visits, 1358.
- (c) Number of infants at age of 6 months—
 - (i) Breast-fed, 67.
 - (ii) Partially breast-fed, 13.
 - (iii) Artificially fed, 24.
- (d) Number of infants born—
 - (i) Prematurely, 11.
 - (ii) At full time, 86.

2. Children (1—5 years)—

- (a) Number of first visits, 8.
- (b) Number of re-visits, 972.

3. Expectant Mothers—

- (a) Number of first visits, 97.
- (b) Number of re-visits, 271.

Ante-Natal Consultations.

Although a certain amount of ante-natal work is carried out by the trained nurses under the scheme, and by doctors in private practice, supervision of expectant mothers remains a pressing need. Fully one-third of the mothers in St. Andrews are unattended before, during or after labour by medical men, and it is unfair that such a heavy responsibility should be placed upon the shoulders of the midwives, even although the infantile and mortality rates show their complete efficiency. The inadequacy of present arrangements has given rise to the formation of a scheme for ante-natal service which has gained the approval of the Town Council and which shortly will be put in operation. For the purposes of the scheme it has been decided not to place the ante-natal supervision of necessitous and other mothers of the Burgh in the hands of a single executive officer, but to co-opt the services of all the practitioners of the town under the administration of the Medical Officer of Health. The doctors have agreed to offer their services, free of charge, and the midwives have been instructed to strongly advise those expectant mothers who cannot afford to engage a doctor, to submit themselves for examination during the months of pregnancy. Each woman will be free to consult the doctor of her choice two or three times during the course of pregnancy. A record card has been prepared giving details of the information to be gathered and the examinations to be made. The cards will be available not only for the type of case described but also for patients consulting medical practitioners in private practice. The Staff of the Clinical Institute has courteously offered the use of their numerous consulting rooms and other facilities in support of the scheme and will have access to the records compiled for purposes of research. Each doctor will be in attendance for consultation on a fixed day at least once a month in the Institute, having been previously informed by the nurses of the number of necessitous cases desiring his services. Private cases will be dealt with either at home at the convenience of the doctors or in the Institute on the day allocated to the doctor for purposes of the scheme.

Post-Natal Consultations.

There is no scheme for post-natal consultations in operation in the Burgh. Post-natal work is in the hands of the general

practitioners, in the ordinary routine of general practice, and in the hands of the midwives who have paid 1134 visits during the year in this connection.

Child Welfare Consultations.

These consultations continue to enjoy an increasing popularity and are held by Dr. Rowand, Medical Officer under the Scheme, twice weekly in the Child Welfare Centre, in sessions lasting for $2\frac{1}{2}$ hours each, 103 sessions were held in 1926, during which 238 children were inspected. The following attendances were recorded :—

(a) Total number of attendances—

		1926	1925
(i) Under 1 year of age, ..	..	1062	753
(ii) Over 1 year of age, ..	..	195	308
		<hr/>	<hr/>
Total, .. ..	..	1257	1061

(b) Number of first attendances—

(i) Under 1 year of age, ..	..	117	76
(ii) Over 1 year of age, ..	..	14	4
		<hr/>	<hr/>
Total, .. ..	..	131	80

Eighty-two per cent. of the babies born in the Burgh during the past year was examined by Dr. Rowand in the Child Welfare Centre. No better testimonial to the work of the Centre could be given than this extraordinary attendance by an appreciative public.

In addition to the above numbers, 213 children between 2 and 5 years of age were seen by Dr. Rowand in the Institute for Clinical Research in furtherance of its aims. Nutritional and respiratory disorders continue to be the main abnormality met with in those children attending the various clinics.

Apart from the number of children who were seen by the Medical Officer at the Child Welfare Centre and at the Clinical Institute, 148 visits by children under 1 year of age and 93 visits by children over 1 year of age were paid at hours other than those of the recognised sessions.

Food and Milk Supply.

The local authority was not called upon to provide food or milk to expectant or nursing mothers during the year. One necessitous infant was supplied with dried milk by the Parish Council.

Day Observation Nursery.

The Day Observation Nursery in connection with the Child Welfare Centre was attended by 41 babies, 34 of them being under one year and 7 of them being over one year of age. A total of 744 daily attendances was recorded for these babies. All the infants were under observation and treatment for nutritional or other disorders. There are no facilities for securing the residence of ailing babies over night or during the week-end.

Provision for Maternity Cases.

As was stated in last year's report, there is no provision in the Burgh for maternity cases living in unsuitable quarters or likely to present complications during confinement. As an indication of the necessity for the provision of maternity services the following figures are quoted regarding the housing conditions of 480 out of 522 maternity cases attended either by midwives or maternity nurses in the Burgh during the past six years. 193 cases were delivered under satisfactory conditions; 287 were delivered under unsatisfactory conditions. Of the latter number, 106 were delivered in one-roomed houses and 181 in the kitchen of houses containing two or more rooms. Of the 106 one-roomed houses, 17 were dirty, 13 were overcrowded, while 6 were both dirty and overcrowded. Of the 181 houses in which confinement was in the kitchen, 28 were dirty, 17 were overcrowded and 10 were both dirty and overcrowded. So that on an average 7 women have been confined each year in dirty houses, 5 in overcrowded houses and 16 in houses which were both dirty and overcrowded.

Following upon a communication from the Medical Officer of Health on "Present Requirements and Future Developments of the St. Andrews Maternity and Child Welfare Scheme," the Town Council, aware that the Cottage Hospital was in process of being extended by the erection of maternity wards, approached the Committee of that institution with a view to facilities being provided therein at reasonable cost. The buildings were inspected by the Medical Officer of Health and were found to be suitable in

every way for the proper care of maternity cases. All the facts regarding the position in the town were placed before the Committee, who, unfortunately, after consideration, decided that they could not provide the desired facilities on the grounds that there was no accommodation for necessitous cases.

Efforts are now being made to find suitable accommodation elsewhere.

Provision for Puerperal Sepsis Cases.

In determining the future policy of the health services of the Burgh in so far as it is related to puerperal sepsis, the Town Council has recognised the risk run by patients and the grave responsibility unavoidably resting on general practitioners by the transportation of cases of puerperal sepsis across the Tay to Dundee, as has been the practice in the past. In view, however, of a circular from the Scottish Board of Health desiring the Local Authority to make explicit arrangements under their scheme of Maternity Service and Child Welfare for the provision of treatment to women suffering from puerperal sepsis, the Town Council, at the end of the year, were considering a proposal to treat these cases in the City Hospital, subject to the approval of the Board. The measure, if approved, will necessitate the expenditure of a moderate sum on equipment.

Refresher Courses for Health Visitors.

Nurse Iris Cook attended the Refresher Course in Dundee during October. It is hoped that opportunities for attendance at further similar courses will be provided for all the nurses associated with the public health activities of the Burgh during the present year.

MILK SUPPLY.

The vital necessity for safeguarding the milk supply against infection was well illustrated during 1926 when, as is described in the section on Infectious Diseases in this Report, an epidemic of dysentery and another of tonsillitis were proved definitely to originate from milk contaminated by infected persons. Fortunately, the machinery for the control and supervision of milk workers is proving efficient and sufficiently adequate to provoke a wholesome endeavour on the part of local dealers to produce

cleaner milk. A detailed description of the steps taken under the Milk and Dairies (Scotland) Act, 1914, as amended by the Milk and Dairies (Amendment) Act, 1922, which came into force on 1st September 1925, is provided in the Report of the Sanitary Inspector.

The officers appointed by the Town Council and approved by the Scottish Board of Health to administer the Act were—

Administrating and Controlling Officer,

	The Medical Officer of Health
<i>Veterinary Inspector,</i>	.. Mr. P. Young, M.R.C.V.S.
<i>Inspector of Milk Shops, Dairies and Byres,</i>	{ The Sanitary
<i>Registrar of Dairies and Dairym,</i>	.. } Inspector.
<i>Bacteriologist and Chemist for services</i>	Dr. G. Matthew Fyfe,
<i>arising out of the 1914 Act,</i>	.. The Laboratory,
	Clinical Institute.

Bye-laws have been framed under the Act and now await the approval of the Board. Certain structural alterations were demanded before the granting of certificates of registration to producers and retailers. A notice to dairymen was prepared for circulation by the Medical Officer of Health. The notice dealt with (a) the duties imposed by the 1914 Act on dairymen on the occurrence of any infectious disease in his family or among his employees ; (b) the symptoms of certain infectious diseases such as scarlet fever, diphtheria, enteric fever, diarrhoea and dysenteries, with a view to acquainting dairymen with the symptoms of persons infected and liable to spread disease ; (c) the prevention of certain infectious diseases, indication the provision by the Town Council, free of charge, of inoculation against scarlet fever and diphtheria ; and (d) the actual provisions of the Act regarding the prevention of spread of infectious diseases by milk.

Unofficial samples of milk were examined from time to time in the laboratories of the Clinical Institute. None of the samples were found to be below the standard for ordinary milk, the average fat content of all samples examined being 3·45. The average for the County, according to figures compiled by the County Analyst for 1916, was 3·55. The lower proportion of fat in St. Andrews milk, calculated on the basis of population and of fat values indicated a loss of about £88 per annum to the population.

Certified Milk.

With the object of safeguarding the population against milk-borne infections, the aim of the Health Department is to secure the general consumption of certified milk. Certified milk is the only safe milk. It comes from herds which are free from tuberculosis and which are examined and tested at frequent intervals by veterinary inspectors, ensuring that the milk is free from the germs of consumption. It is free from dirt in general and from the intestinal bacteria contained in cow's dung. It has a high fat value. It must contain 3·5 per cent. of milk fat ; the fat standard of ordinary milk is 3 per cent. It is slightly more expensive than ordinary milk, but when all the facts regarding milk and milk infection are known, the public will demand this clean milk and with the increased demand prices will fall.

It is intended to lay before the Town Council during the present year a proposal to ensure that the City Hospital and all other agencies connected with the health services of the Burgh be provided with certified milk.

TREATMENT OF DIABETES.

During the year the Town Council was called upon to provide medicines and treatment to persons who are suffering from diabetes and who, in the opinion of the Local Authority, require assistance in obtaining such medicines and treatment. After consideration, the Town Council decided on and the Scottish Board of Health approved of the following arrangement :—

- (a) That Insulin be made available for certain necessitous cases.
- (b) That a supply of Insulin be kept in the Public Health Department and that Blood Sugar estimations be made in the Clinical Institute at a cost of ten shillings each.
- (c) That medical practitioners make application in writing to the Medical Officer of Health giving the necessary assurance as to the status of the patient.

Ten cubic centimetres of Insulin was supplied to a doctor for a necessitous case of diabetes mellitus later in the year, and one blood sugar estimation was made.

LABORATORY SERVICES.

The following statement gives the number of examinations made on Public Health material in the laboratories of the Clinical Institute for the year 1926 :—

			<i>Total.</i>	<i>Positive.</i>
Throat Infections—				
Diphtheria, ..	..	..	33	7
Scarlet Fever, ..	..	..	9	—
Tuberculosis,—				
Sputum, ..	..	..	19	2
Pus, ..	..	..	10	1
Urines, ..	..	..	16	—
Coli-Typhoid Infections—				
Agglutinations, ..	..	..	40	35
Blood Cultures, ..	..	..	5	2
Faeces, ..	..	..	73	59
Urines, ..	..	..	4	1
Food Poisoning—				
Agglutinations, ..	..	..	2	—
Blood Culture, ..	..	..	2	—
Faeces, ..	..	..	2	—
Foodstuffs, ..	..	..	2	—
Venereal Diseases—				
Wassermann Tests, ..	..	..	19	4
Gonococcal Examinations, ..	..	..	10	2
Spirochaete Examinations, ..	..	..	1	1
General—				
Urines for Bacteriological Examinations, ..	..	..	20	
Urines for General Examination,			55	
Throat and Nose Swabs for organisms, ..	..	..	79	
Sputum for organisms, ..	..	..	15	
Faeces for protozoal examination,			10	
Ophthalmia Neonatorum, ..	..	..	2	
Blood Cultures, ..	..	..	1	
Faeces for Blood, ..	..	..	5	
Malaria, ..	..	..	3	
Hair for Ringworm, ..	..	..	2	

Biochemical Examinations—

Blood Sugar,	2
Urinary Sugar,	3
Milk,	12
Water and Food Samples, ..	7
Bacteriological Examinations of	
Water,	31
Bacteriological Examinations of	
Milk,	12

Animal Experiments—

Guinea Pigs inoculated with	
Milk deposits for tubercle	
bacilli,	11
Guinea Pigs inoculated in con-	
nection with dysentery out-	
break,	10

Grand Total, ..	<u>527</u>
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FACTORY AND WORKSHOPS ACT.

A statement regarding conditions in the Burgh under the provisions of the above Act is supplied in the Report of the Sanitary Inspector. There are indications that during the present year it will be necessary to revise the Register for which purpose inspection of all the non-residential premises of the town will be undertaken.

REPORT BY VETERINARY INSPECTOR.

To the Scottish Board of Health, The Provost, Magistrates and Councillors of the Burgh of St. Andrews.

ANNUAL REPORT FOR 1926.

Gentlemen,

In presenting my First Report on the work of the Veterinary Department of the Burgh of St. Andrews for the year ending 31st December, 1926, I have to state that the Report covers a period of only eight months commencing from May of above year.

The work in connection with the above Department falls under four sections :—

- (a) The Milk and Dairies (Scotland) Act, 1914.
- (b) The Inspection of Meat.
- (c) The Diseases of Animals Act, 1914.
- (d) The Veterinary Supervision of the horses of the Cleansing Department.

(A) MILK AND DAIRIES (SCOTLAND) ACT, 1914.

This Act, although introduced in 1914 and later amended in 1922, was not enforced until September 1925, on account of the intervention of the Great War.

It was in May, 1926 that arrangements were made between the Scottish Board of Health and the Town Council of St. Andrews regarding the working of the Act in the Burgh. During the period of this report there were several meetings between the Medical Officer of Health, the Veterinary Inspector and the Sanitary Inspector regarding regulations for the administration of the Act within the Burgh, and in particular regarding the preparation of Bye-laws under the Act. for submission to the Town Council and Scottish Board of Health. Various alterations in and additions to the Model Bye-laws, issued by the Board, were suggested.

Registered Dairies.

There were eight registered Dairies in the Burgh when work under the Act commenced. One Dairy, however, has ceased to exist owing to the Town Council acquiring the property for the extension of the Housing Scheme in the eastern part of the town. There are at present in the Burgh no cow-keepers who do not come under the Act.

Number of Cows in the Burgh and General Health of same.

There were in the Burgh at the end of the year 100 cows all of which were in good condition, showing no visible signs of Tuberculosis. There has been no necessity to cast or apply the Tuberculin Test to any cow in the Burgh.

With the exception of the usual minor ailments met with where bovines are kept, there has been nothing to report.

Cleanliness of Cows and Byres.

Generally speaking, the Cows and Byres within the Burgh were in good condition and clean, steps having been taken to rectify any discrepency where it existed.

Cleanliness in Milking.

There is still a certain amount of improvement required with regard to this, but the dairyman is now beginning to realise the necessity of wearing clean overalls, etc., and in time it is thought a more satisfactory standard will be reached.

Diet and Fodder.

All the cows in the Burgh were sufficiently fed to maintain both their sustenance requirements and an ample supply of milk of good quality.

The usual feeding stuffs applicable to Dairy wants were used, all of excellent grades. During the summer months the cows were out at grass in most cases all day, with the exception of milking times.

Offences under Sections 13 and 14 of the Milk and Dairies Act, 1914.

There have been no cases under these Sections during the period under review.

Samples of Milk, etc., for Examination under Section 21 of the Act.

As far as this Department is concerned there has been no necessity to take any samples.

(B) MEAT INSPECTION.*Slaughter House.*

Within the Burgh there is one slaughter-house owned by the Town Council.

The slaughter house consists of four booths, each booth having an individual cattle court with a supply of water. The remaining buildings consist of a Hide and Tallow Shed, a Tripe Boiler-house, a Water Closet and a Superintendent's Office.

The Slaughter-house is sanitary and kept as clean as it can be. It is, however, out of date and not in keeping with other Burgh Departments.

The Slaughter-house, as it stands, requires to be remodelled. There are no means of cooling the carcasses except in the killing booths. There is no detention chamber or lavatory accommodation and the Veterinary Inspector has no office or room to carry out any necessary laboratory tests on specimens from detained carcasses.

During the present year, it is hoped, measures will be taken to ensure a more satisfactory condition of affairs than at present exists in the Slaughter-house.

Inspection of Carcasses.

The carcasses are inspected daily by the Veterinary Inspector. Any carcass departing from the normal is reported to the superintendent by the slaughterman and is detained until examined by the Veterinary Inspector.

Detailed records are kept of all cattle, etc., killed, as also of diseased carcasses.

There has been no necessity to take any legal proceedings with regard to the seizure of detained meat.

Bye-laws.

There is need for the revision and more stringent application of the Bye-laws governing the Slaughter-house. Suggested alterations will be submitted to the Town Council in the course of the present year.

Reports.

During the year the following report was furnished by the Veterinary Inspector to the Town Council regarding the methods employed in the slaughter of animals.

“ Since your letter of the 20th of April 1926 I have made enquiries regarding the method of slaughtering used in the principal large centres in Scotland.

The method of felling animals generally in favour, is the use of the pole axe, although in some centres, bulls and boars are dispatched by means of the humane killer.

I understand that in Glasgow the Town Council adopted the method of shooting all cattle, but for some reason or other the order has not been insisted upon, the pole axe being used exclusively by the licensed slaughtermen.

In Dundee some time ago, there was a demonstration between the R.S.P.C.A.'s Gun Expert from London and Dundee Licensed Slaughtermen using the pole axe, six cattle being slaughtered by each method, when, after due consideration by the Town Council in Committee, it was decided to abide by the pole axe method.

The shooting is perhaps much quicker, but it is doubtful if it improves the keeping quality of the flesh, also there is always the big element of untoward incidents happening to endanger human life where a loose bullet is employed ; while, provided the slaughtermen are experienced in the use of the pole axe, as are our two slaughtermen in St. Andrews, the stunning effect is sufficient to eradicate all pain of subsequent operations, and I think the bleeding of the animal is more effective.

In the Jewish method of slaughter there is no pole axe used at all, the animal being slaughtered by the Rabbi, who simply severs the jugular veins. The flesh of animals thus killed is practically devoid of blood altogether.”

Tripe Boiler-house and Hide and Tallow Shed.

Both these premises are situated within the slaughterhouse enclosure. Considering the fact that they also are out of date they are kept as well as can be expected.

Statistics of Animals passing through Slaughter-house.

It will be seen from the following abstract that 1785 animals were killed during the period under review. The abstract differentiates between the kind of animals killed and the number slaughtered each month.

Month.	Oxen.	Cows.	Calves.	Sheep and Lambs.	Pigs.	Total.
May ..	30	..	5	76	6	117
June ..	55	1	8	157	6	227
July ..	73	1	11	250	5	340
August ..	58	..	11	219	4	292
September	55	2	7	186	5	255
October ..	51	2	4	146	17	220
November ..	51	..	3	117	15	186
December ..	44	..	4	88	12	148
Total ..	417	6	53	1239	70	1785

Destruction of Carcases.

All carcases are buried in lime at one or other of the Town Council refuse dumps.

(C) DISEASES OF ANIMALS ACT, 1894.

Since the Town Council took over from the County Authorities the duties of carrying out this Act, no cases have been reported.

(D) VETERINARY SUPERVISION OF TOWN STABLES.

All four horses belonging to the Burgh are in good condition and well looked after. The stables are kept scrupulously clean.

I have the honour to be,

Gentlemen,

Your obedient Servant,

P. YOUNG, M.R.C.V.S.,
Veterinary Inspector.

REPORT BY SANITARY INSPECTOR.

To the Scottish Board of Health, The Provost, Magistrates and Councillors of the Burgh of St. Andrews.

Gentlemen,

ANNUAL REPORT, 1926.

I have the honour to present my Sixth Annual Report on the work of the Sanitary Department of the Burgh of St. Andrews for the year ending 31st December 1926.

In circular No. V.—Public Health—1926 issued by the Scottish Board of Health on the 17th day of January 1927, Sanitary Inspectors are called upon to include in their reports the following :—

(a) A general account of the Sanitary state of the Burgh as regards water supply, drainage, scavenging, nuisances, etc., together with any suggestions for its improvements.

(b) An account of his general inspections, and of any special inspections or enquiries, including the supervision of slaughter-houses and other offensive trades, and the sanitary condition of schools and of factories and workshops.

(c) An account of the condition of the common lodging-houses.

(d) An account of the condition of the burial-grounds.

(e) An account of his proceedings under the Burgh Police Act.

(f) A report on the work done by the Local Authority under the Sale of Food and Drugs Acts, and orders relating to milk.

(g) A report on the Dairy premises within the Burgh.

(h) Observations on food inspection, unsound food, and particulars of the sanitary condition of premises where foods are manufactured, prepared, stored, or exposed for sale.

(i) An account of any proceedings under the Rag Flock Act, 1911.

(j) A statement, in such form as the Scottish Board of Health may from time to time direct, of his proceedings during the year.

A—WATER SUPPLY.

A plentiful supply of water has been provided in the Burgh during the year. St. Andrews obtains its water supply from three reservoirs, all of which are situated outwith the Burgh boundary. The most distant of the three being about five miles from the town. These reservoirs have a storage capacity equivalent to 238,750,000 gallons of water. The largest reservoir contains 222,000,000 gallons ; the next in size contains 13,000,000 gallons, while the smallest of the reservoirs contains 3,750,000 gallons. The undernoted table gives the names of the reservoirs, their respective distances from the Burgh, their cubic capacities, and, the volume of water contained in each.

Name of Reservoir.	Distance from Burgh.	Capacity (Cub. Feet).	Volume (Gallons).
Cameron	5 miles.	35,000,000	222,000,000
Lambielotham ..	3 miles	2,080,000	13,000,000
Cairnsmill	1½ miles	600,000	3,750,000

Inorganic matter in suspension is precipitated in the reservoirs before the water is led to the filters and, during the filtration of the, water suspended organic matter is eliminated. There are two sets of filters in use, each set containing four batteries of filtering medium. This medium consists of sand and graded gravel. On the following pages are abstracts of the water filtered each month throughout the year, and the consupt of water filtered during the past sixteen years (1911-1926). It will be noted from the first abstract that the average consupt per head of population was 69·55 gallons. The following extensions to the mains throughout the Burgh were made during the year.

Grange Road.—New 3 inch water main, 60 lineal yards.

Langlands Road.—New 4 inch water main, 170 lineal yards.

ST. ANDREWS WATER.

Abstract of Monthly Consumpt of Water Filtered at Pipeland 1926.

Date.	Upper Filters.	Lower Filters.	Grange.	Total Consumpt Gallons.	Rainfall Pipeland. Cameron Inches.	Average daily consumpt.	Galls. per head 10,400.
January,	11,389,800	9,493,200	541,300	21,424,300	4.64	691106.45	69.1
February,	10,195,000	8,799,200	591,400	19,585,600	4.41	699485.91	69.9
March,	11,032,100	9,513,600	996,100	21,541,800	1.04	694896.77	69.4
April	10,786,300	9,406,100	621,800	20,813,200	1.75	693773.33	69.3
May,	11,408,800	9,740,600	632,600	21,782,000	1.64	701645.16	70.1
June,	11,454,900	9,691,000	582,900	21,728,800	2.90	724293.33	72.4
July.	12,400,700	10,433,400	532,400	23,366,500	2.33	775048.38	77.5
August,	11,623,900	9,904,500	640,500	22,168,900	2.09	715125.83	71.5
September.	10,897,200	9,302,600	576,400	20,776,200	3.93	692540.00	69.2
October,	10,733,500	9,363,600	834,100	20,931,200	4.82	675200.00	67.5
November,	10,128,800	9,169,100	739,900	20,037,800	4.92	667926.66	66.7
December,	10,807,400	8,859,800	1,055,800	20,723,000	.29	668483.87	66.8
	132,858,400	113,676,700	8,345,200	253,879,300	24.76	695556.98	69.5

Average consumpt per day, .. 253,879,300 = 695,556.98 gallons.

365

per month, .. 253,879,300 = 21,156.608 "

12

per head, .. 253,879,300 = 69.55 "

365 x 10,000

ST. ANDREWS WATER.

Abstract of Consumpt of Water Filtered at Pipeland Filters.
Years 1911-1926.

Year.	Total Consumpt.	Average per day.	Average per month.	Average per head.	Cameron. Pipeland.	Rainfall Days.
1911,	121,393,300	332,812.83	10,116,025	41.59	..	18.95
1912,	136,199,500	372,076.72	11,349,958	46.50	..	27.93
1913,	141,001,700	386,281.75	11,750,141	48.28	..	24.38
1914,	139,544,700	382,314.24	11,328,725	47.79	..	21.10
1915,	132,682,500	418,308.22	12,723,541	52.28	..	32.68
1916,	157,959,700	432,766.30	13,163,308	54.09	43.75	38.85
1917,	155,841,200	426,962.16	12,986,736	53.37	24.51	20.94
1918,	156,302,200	428,252.60	13,026,016	53.53	26.81	24.92
1919,	152,451,400	417,675.06	12,704,283	32.22	30.16	26.52
1920,	161,043,600	440,009.83	13,420,300	55.00	30.02	26.91
1921,	157,227,000	429,581.96	13,100,200	47.73	24.42	22.00
1922,	161,520,900	441,040.71	13,460,075	47.42	24.40	27.23
1923,	181,272,700	496,637.53	15,106,058	52.83	28.96	27.23
1924,	178,209,800	486,912.02	14,850,816	51.25	34.10	31.85
1925,	216,163,400	592,228.49	18,013,616	62.33	30.34	27.05
1926,	253,879,300	695,556.98	21,156,608	69.55	37.13	34.76

A—DRAINAGE.

From the engineering standpoints, the subjects of drainage and sewerage are so intimately associated as to be almost inseparable. In general, however, it may be stated, that while the subject of sewerage refers principally to the removal of waste matter common to human habitations, the subject of drainage properly relates to the removal of storm water from the surface and subsoil. A good sewerage system should provide for the prompt removal of all water from the surface and subsoil (whether rainfall or ground water) soiled kitchen and factory waste, decaying vegetable matter, and liquid refuse. By such means, putrifying matter and stagnant water, which not only generate disease germs but also make their continued existence possible, are effectively removed. The soil is thus rendered dry and wholesome, and the air is purified. The drainage of St. Andrews is carried out on the combined system. This system has one set of pipes for the removal of both storm water and house wastes. The drainage system of dwellings, etc., newly erected, is tested and the sanitary fittings examined before the tradesmen leave the work. Any defects which exist are made good before the work is passed. The test applied is the one known as the Smoke Test. All drains are disconnected before they join the sewers.

The following extensions were made to the sewers during the year :—

Grange Road.—New 8 inch F.C. Sewer, 65 lineal yards.

Langlands Road.—New 9 inch F.C. Sewer, 160 lineal yards.

The main sewer in the grounds of Abbey Park, at the point where the pipes run parallel with the Kinness Burn, collapsed. The collapse of this section of the main sewer was caused by the failure of the retaining wall at this particular place. Temporary means have been taken to prevent the fouling of the burn by the sewage, and at present the gap in the sewer is bridged over by a wooden trough through which the sewage passes. The repairs to the sewer as also the maintenance of the sewerage system in general are executed by the Burgh Surveyor's Department.

During the year consideration has been given to the question of the drainage of the lands at Woodburn, and the following extracts from the Burgh Engineer's Report on the matter, though issued early in 1927, might with advantage be dealt with in the present report :—

“ The amount of sewage to be treated from the District is 5000 gallons domestic sewage ; 24,000 gallons from Laundry, plus an allowance of 20,000 gallons excessive rainfall, making a total amount of 49,000 gallons per 12 hours. Owing to the low-lying nature of this district the net lift of the sewage to the high level sewer in St. Mary’ Street is 13 feet, but as it is necessary to have a generous margin in pumping head for reduced flows and increased friction, a total estimated pumping head of 20 feet had to be considered in designing the scheme.”

In the preparation of the scheme three different methods of raising sewage were considered as follows :—

First—“ Autoram ” Sewage Lift.

Second—“ Patent automatic compressed air sewage ejector.”

Third—“ Vertical spindle sewage pumps.”

A brief description of these methods follows. The “ Autoram ” sewage lift was, on account of the large volume of water necessary in its operation, considered to be less favourable than the other schemes. The “ Patent automatic compressed air sewage ejector,” though commended by the Engineer, was, owing to its cost, by him turned down in favour of the third scheme, namely, the “ Vertical spindle sewage pump.”

The report continues with a description of the work necessary in the construction of the plant and the connecting of the low and the high sewers. The annual running costs of the scheme were shown to be £161. The Town Council have not finally decided upon the matter.

There is no doubt that the raising of the sewage from the low area in question and discharging it into the present gravitation sewer in St. Mary’s Street would bring about a great improvement, owing to the fact that there are a few dry-closets and a number of cesspools in the locality.

The disposal of the sewage of St. Andrews is effected by direct discharge into the sea. There are two outfall sewers, one of which is an 18 inch diam. pipe, and the other a 15 inch diam. pipe.

A—SCAVENGING.

For the purpose of cleansing and scavenging, the Burgh is divided into Districts, on each of which one section man is constantly engaged. His duties include the cleansing of streets, water channels, gutters and gullies, and he is also called upon to assist with the work of the collection of household refuse. The collection of household refuse is carried out daily (excluding

Sundays) between the hours of 7 a.m. and noon. For this work four horses are employed. The disposal of the refuse takes place in two dumps—one situated at the west sands, and the other is an old disused quarry situated to the south-west of the Burgh. The quarry tipping ground is used during the summer months, and the sands tipping ground is used during the winter months. The rat catcher employed in St. Andrews pays regular visits to the tipping grounds, and sets poisoned baits, and his operations have had the desired effect. The poisons used by him are arsenic and phosphorus.

A—NUISANCES.

During the year investigations were made into various complaints regarding nuisances. In one instance it was learned that the occupants of a dwelling-house, in a building partly used for business and partly let as a dwelling-house, had no water closet accommodation, but had the use of the sanitary accommodation provided for the persons employed in the business part of the premises. As the arrangement was not in any manner satisfactory, the proprietors were called upon to provide additional water closet accommodation. This work was duly executed. One of the most objectionable nuisances encountered was one where waste matter was ejected from a boarding house, into the rhones. In addition to the serving of a notice under Section 19 of the Public Health (Scotland) Act, 1897, upon the authors of the nuisance, the nuisance was made the subject of a report to the Public Health Committee who agreed to the suggestion contained in the report—that a prosecution should follow any recurrence of the practice. The rhones and the trap at the foot of the conductor were required to be cleaned. Fortunately, these steps have, so far, been effective, as no further complaint has since been made. In three cases choked drains were reported on and the proprietors instructed to repair the defects. The attention of proprietors was also directed to the condition of grease boxes which required cleansing. Alterations on the discharge pipe from a cesspool at the south-west of the Burgh were necessary and the attention of the persons concerned was directed to the existing conditions. The work required was in course carried out and the results which followed are satisfactory. The waste from the bath and wash-hand basin in one instance was choked, and

the proprietor declined to do anything when approached by the tenant. A complaint was ultimately lodged and the necessary notice served on the proprietor who thereafter had the work executed. An accumulation of stable manure in one instance formed the ground of a complaint, the removal of the manure was undertaken and no complaints have since been made.

On two occasions, during the year, the basements of houses were subjected to flooding by sewage. In the case of one property this was caused by a choke in the main sewer, which caused the sewage to rise in the traps in the area outside the basement floor of the property, and ultimately flow into the house, under neath the floor, at the ventilators provided for through ventilation. The other case occurred as a result of a burst in the sewer. The Council undertook the works requiring to be done in removing the accumulations and in repairing the sewers, compensation in both cases being made to the occupiers of the houses.

Complaints were received throughout the year with regard to the conditions of certain properties. In one case repairs to the roof had to be executed. In other cases the passages and landings had to be whitewashed ; an additional window for light and ventilation had to be provided ; and a staircase which was considered inadequately lit was considerably improved by the lime-washing of the external walls opposite ; in another case repairs to ceilings were necessary.

Visits of inspection were paid to the Burgh by a rat catcher, engaged by the Public Health Department to deal with the extermination of the vermin. In addition to attacking the vermin himself, he demonstrated to those troubled with rats how to clear their premises of the pests. Added to these measures taken against the rat in St. Andrews, hand bills during " Rat Weeks " were distributed throughout the town.

B—GENERAL INSPECTION.

The pitching of tents on the East Sands and on the lands of St. Nicholas Farm adjacent to the sands, again formed a subject for report during the year. The sands being fouled and the provision of sanitary accommodation for the various tents being in general unsatisfactory, steps were taken to have the tents on the sands removed, and the occupier of the farm of St. Nicholas was notified of the conditions prevailing on his lands. Accepting

as he did a fee from the owners of the tents pitched on his land he was, in a measure, responsible for the sanitary conditions. These proceedings naturally took up some little time and it was anticipated that no really satisfactory results could be accomplished in view of the fact that the camping season was nearing an end. The matter, however, was not abandoned, and the owners of the farm in question, it is understood, have taken steps to prohibit the tenant of the farm making use of the ground in the manner referred to. It will be evident, therefore, if the information with regard to the action of the owners of the lands of St. Nicholas, is correct, that no grounds for complaint will arise this season from a similar source, a state of affairs which will be appreciated by the public making use of these sands. Apart, however, from the grounds of complaint referred to, the amenities of the district were not enhanced by a heterogeneous array of tents studded all over the ground in question, an important point bearing in mind that one of the main approaches to the Burgh passes through this district.

The conditions relative to the supply of water and sanitary accommodation in houses of one to five apartments, is as follows :

<i>Water Supplied.</i>	<i>1 room.</i>	<i>2 rooms.</i>	<i>3 rooms.</i>	<i>4 rooms.</i>	<i>5 rooms.</i>
By tap at sink, in kitchen, seullery or pantry, ..	22	324	232	181	120
On stair, landing in lobby, cellar or wash-house, ..	10	21	9	5	1
By tap in water closet or lavatory, ..	..	5	7	1	..
By tap outside, ..	31	51	6	6	2
Without water supply, ..	4	..	..	..	..
Totals, ..	67	401	254	193	123
<i>W.C.'s provided.</i>	<i>1 room.</i>	<i>2 rooms.</i>	<i>3 rooms.</i>	<i>4 rooms.</i>	<i>5 rooms.</i>
Inside house, on landings, stairs, lobbies, wash-houses, ..	19	163	254	193	123
Outside, ..	46	238	..	..	..
Without provision, ..	2	..	..	..	..
Totals, ..	67	401	254	193	123

There are less than six dry closets within the burgh and these are situated on the outskirts of the town. Indeed the greater number exists in the district to which, under the foregoing part of the present report dealing with " Drainage," reference was made

regarding a scheme at present under consideration to raise the sewage of a low lying district to a higher level and connect it with the existing gravitation sewer in the higher area. At a farm situated on the outskirts of the Burgh exists the only privy midden in the town. There are remarkably few ashpits in the Burgh, those in existence are situated at Cottar houses of the farms on the out-lying areas.

B—SLAUGHTER-HOUSE.

The only Slaughter-house within the Burgh is owned by the Town Council. In the Slaughter-house there are four booths, each booth being provided with a cattle court in which there is a supply of water. From the following abstract it will be noted that, during the year, 2504 animals were killed in the Slaughter-house. The abstract distinguishes between the different kinds of beasts and the number slaughtered each month.

<i>Month.</i>	<i>Cattle.</i>	<i>Sheep.</i>	<i>Calves.</i>	<i>Pigs.</i>
January, ..	58	127	4	10
February, ..	38	87	9	14
March, ..	49	117	8	15
April, ..	40	125	9	9
May, ..	30	76	5	6
June, ..	56	157	8	6
July, ..	74	250	11	5
August, ..	58	219	11	4
September, ..	57	186	7	5
October, ..	53	146	4	17
November, ..	51	117	3	15
December, ..	44	88	4	12
Totals, ..	608	1695	83	118

B—OFFENSIVE TRADES.

The trades carried on under this category within the Burgh are two in number, both are directly connected with the Slaughter-house, but are not, however, controlled by the Town Council.

The following are particulars of the trades in question :—

1. *Tripe Boiling*.—The trade of tripe boiling is carried on in an outhouse within the slaughter-house premises. No complaints against it have been received during the year.

2. *Hide and Tallow Factoring*.—In connection with the Hide and Tallow trade, an outhouse, also situated within the Slaughter-house premises, is utilised for the storing of the hides of animals

killed in the Slaughter-house, until such time as removal to Dundee takes place. The hides are removed at least twice each week. No complaints against this undertaking have been received during the year.

B—INFECTIOUS DISEASES.

During the year the total number of cases of Infectious Diseases (excluding Tuberculosis) which occurred in the Burgh was 131. Of this number, however, the outbreak of dysentery, reported on by the Medical Officer of Health in his report for 1926, accounted for 116 cases, which is equivalent to 88·5 per cent. of the total number of reported cases of Infectious Diseases for the year, so that if this number be deducted from the total cases of infection, the balance—15—is a very small one. Of these fifteen, Scarlet Fever accounted for 4, Diphtheria for 5, Erysipelas for 1, Ophthalmia Neonatorum for 2, Acute Primary Pneumonia for 2 and Acute Influenza Pneumonia for 1. St. Andrews has, therefore, been singularly free from Scarlet Fever in 1926, and it is gratifying to note that from a comparison of the cases of infectious diseases extending over the past five years, last year's incidence was the lowest since 1922. The number of cases of diphtheria in 1926 compares favourably with the incidence of this disease during the immediately preceeding five years. In this instance, however, diphtheria does not occupy the same position as Scarlet Fever as will be observed from the following table, which gives the total cases of these diseases occurring in St. Andrews during the years 1921-1926 inclusive.

<i>Disease.</i>	1921	1922	1923	1924	1925	1926
Scarlet Fever, ..	0	7	15	90	14	4
Diphtheria, ..	11	2	3	5	21	5

Of the 15 cases of infectious diseases occurring in 1926, nine were removed to the Isolation Hospital for treatment. These nine were the 4 Scarlet Fever and 5 Diphtheria cases. One case (Acute Primary Pneumonia) was treated in the Cottage Hospital, and the remaining five cases were treated in the patients' homes. These included the case of Erysipelas, the two cases of Ophthalmia Neonatorum, and the two cases of Pneumonia, one of which was Acute Primary Pneumonia and the other Acute Influenzal Pneumonia.

Immediately after the removal of the cases to the Isolation Hospital the room or rooms that had been occupied by the patients were subjected to disinfection. Articles of bedding and wearing apparel, etc., were steam disinfected when necessary.

Disinfection of Rooms, etc., is carried out on the vaporisation principle. Formalin tablets being used. All outlets, from the room, through which the fumes might escape, are sealed up with gummed paper. The door leading to the room being also sealed in this manner. In addition to this Izal is supplied to the householder for use in the water used for washing floor and other wood-work, and any utensils requiring to be disinfected.

Steam Disinfection of Bedding and Wearing Apparel.—Bedding and wearing apparel are removed to the Steam Disinfecting Depot from time to time as found necessary. The Depot is situated in an outbuilding adjacent to the Isolation Hospital. The building and the disinfecting plant are so arranged that the infected articles are received in one compartment and when disinfected are removed through a different compartment, thus contact between the compartment from which the disinfected articles have been removed and the compartment into which they were received is avoided.

B—SCHOOLS.

The standard of cleanliness of the schools within the Burgh remains satisfactory and the conveniences are kept in a thoroughly clean condition.

B—FACTORIES AND WORKSHOPS.

During the year 110 visits of inspection were made to the Factories and Workshops in the Burgh, when investigations were conducted into the cleanliness and sanitary arrangements of the premises. The prevailing conditions were on the whole found to be satisfactory, and as no serious contraventions were encountered, the matters requiring attention were dealt with during the visit of inspection. It is proposed to overhaul the register of Factories and Workshops in the Burgh during the present year.

C—COMMON LODGING HOUSES.

There are no Common Lodging Houses within the Burgh.

D—BURIAL GROUNDS.

There are two burial grounds within the Burgh and one, belonging to the Burgh, situated outwith the boundary. The layers in the former two burial grounds are all disposed of and consequently no interments takes place in these grounds other than by those who own ground there. At each burial ground in the Burgh one man is employed during the whole year, and, in the summer months, as well as during other necessary periods, additional labour is employed. The condition of the grounds is satisfactory and they are kept in good order and repair.

E—PROCEEDINGS UNDER THE BURGH POLICE ACTS.

Under Section 117 of the Burgh Police (Scotland) Act, 1892 the owner of a property in the Burgh was called on to whitewash and clean down the passages and common staircase in the building. Under Section 184 overcrowding occurred in the same property due to the fact that one of the rooms was not adequately lit or ventilated, and the inhabitants were, therefore, unable to make much use of the room in question. Attention was directed to the prevailing conditions and the additional window required for the room was in course provided. Under Section 185 of this Act the darkened condition of a common staircase and passages was considerably improved by the whitewashing of the external walls opposite the window providing light to this part of the property. In terms of Section 246 of the Act additional water closet accommodation in one instance was called for, and in due course was provided.

F— SALE OF FOOD AND DRUGS ACTS AND ORDER RELATING TO MILK.

Throughout the year eleven samples of milk were drawn for analysis and submitted to the M.O.H. for examination and report. It is satisfactory to note that the samples were all certified to be genuine. From the following table the quality of each sample may be noted, and from the same table an average standard of the milk in the Burgh during the year 1926 may be obtained.

<i>No. of Sample</i>	<i>Fat Content.</i>	<i>Non-Fatty Solids.</i>	<i>Total Solids.</i>	<i>T.B. Present.</i>
1.	3·47°/o	8·83°/o	12·30°/o	No report
2.	3·62°/o	8·78°/o	12·40°/o	Do.
3.	3·37°/o	8·73°/o	12·10°/o	Do.
4.	3·47°/o	8·83°/o	12·30°/o	Nil.
5.	3·60°/o	8·87°/o	12·47°/o	Do.
6.	3·56°/o	8·95°/o	12·51°/o	Do.
7.	3·49°/o	8·91°/o	12·40°/o	Do.
8.	3·40°/o	8·83°/o	12·23°/o	Do.
9.	3·30°/o	8·76°/o	12·06°/o	Do.
10.	3·57°/o	8·83°/o	12·40°/o	Do.
11.	3·15°/o	8·55°/o	11·70°/o	Do.

From the above table the average standard of milk supplied in St. Andrews during the year ending 31st December 1926 is found to be 3·45 per cent. fat, 8·81 per cent. non-fatty solids, and 12·28 per cent. total solids. This average compares very favourably with the standards required, which are, 3·0 per cent. fat, and 8·5 per cent. of milk solids other than milk fat, being equivalent to 11·5 per cent. total solids.

G—DAIRIES.

Milk and Dairies Scotland Act, 1914. During the year a considerable amount of work was done under this Act. All persons dealing in milk either by wholesale or retail in the Burgh were called on to lodge, on forms of application prepared for this purpose, application for the registration of their premises. Upon receipt of these applications, the various premises were visited and reported on to the Local Authority. In the report, comments were made upon the conditions found at the various places visited. Bye-laws were prepared by the Medical Officer of Health, the Veterinary Inspector and the Sanitary Inspector, on the lines laid down in the Board's Model Bye-laws, and these were ultimately approved by the Local Authority who thereafter transmitted them to the Board of Health. Various suggestions made by the Local Authorities' Public Health Officials were criticised by the Board, and modifications called for. These were, in some cases, ultimately complied with, while in other instances explanations were submitted by the Public Health Officials in support of their additions to the Bye-laws, and at the present moment the Board's approval

is being awaited. In the meantime temporary registration of the various Dairy Premises exists, but as soon as the draft Bye-laws have been approved, the operation of the Milk and Dairies 1914 Act will be put into full action. The first step which will take place will be the registration of the various persons dealing in the milk trade in respect of their premises, and accompanying the certificate of registration, a pamphlet in which has been set forth by the Medical Officer of Health, the precautions to be taken against the spreading of Infectious Disease, together with a copy of the Circular No. VI.—Foods—issued by the Board of Health on the 13th April last, will be included. The forwarding, to the persons dealing in the milk trade, of the said circular and pamphlet will, it is anticipated, enable those engaged in this industry to take immediate precautions against the spread of Infectious Diseases, whenever any signs of such become apparent amongst their employees or family—an important matter when one realises that a great deal of harm may be done by delay in reporting the trouble to the Public Health Officials. It is, I think, generally realised that to call for immediate enforcement of the requirements contained in the 1914 Act would place very serious hardships upon the milk industry. It is therefore, proposed to bring about the desired changes by a gradual fulfilment of the various matters to be carried out. One of the earliest matters to be looked into, and to be enforced where required, will be the question of beamfilling. The quantities of dust, etc., which doubtless rest on the wall head, must under favourable conditions very materially affect the purity of the air in a byre resulting in a two-fold evil—the possibility of injury to the animals and the possibility of dust being precipitated into the milk. For these reasons it is given priority in the works to be enforced. Moreover this is a part of the byre, etc., which is not readily seen, being in many cases out of reach, a point which strengthens the argument for its immediate removal.

The effects of the 1914 Act will doubtless bring forth a much cleaner milk, and it is distinctly gratifying to know that there exists in the Burgh already two sources from which the purest of all milk may be had. I refer here to that grade of milk known as “Certified Milk.” One of the sources just referred to is a local dairy, where supplies of this milk can be had, the dairyman

receiving it from registered premises in the south of Scotland. The other source is from premises about $2\frac{1}{2}$ miles from the Burgh. The supply from the latter source is delivered throughout the Burgh each day by a motor van owned by the producer. He is registered in the Burgh in respect of his motor van, but the premises from which the milk is produced and the bottling establishment, being outwith the Burgh boundary will, no doubt, be dealt with in the District Inspector's Report.

The following are the particulars of those who are registered in the Burgh.

Occupiers of Dairies and Byres within the Burgh,	8
Occupiers of Dairies only within the Burgh,	3
Occupiers of Shop from which Sterilized Milk may be obtained,	2
Occupier of premises in Dundee from which Sterilized Milk is delivered in St. Andrews,	1
Occupiers of premises outwith the Burgh but who deliver Milk within the Burgh by horse or motor vehicles,	8
Total,	<hr/> 22 <hr/>

H—OBSERVATIONS ON FOOD INSPECTIONS, Etc.

Reference has previously been made to the milk supply of St. Andrews, and particulars of the standards of purity of the samples of milk drawn for analysis have also been commented upon, so that to report on this subject in detail here would not, therefore, serve any useful purpose, and, on that account, it is omitted from this part of the report.

The following carcasses and parts of carcasses of animals slaughtered in the Burgh Slaughter-house, were, upon examination by the Veterinary Inspector, condemned as unfit for human consumption, and these were, accordingly, destroyed. The destruction was effected by the burial of the carcasses, etc., in lime, the work being undertaken by the employees of the Local Authority.

Disease.	Cattle.		Sheep.		Pigs.	
	Seized wholly.	Seized partially	Seized wholly.	Seized partially	Seized wholly.	Seized partially
Generalized and Local Tuberculosis, ..	2 (1326 lbs.)	1 (276 lbs.)	..	..	..	..
Cirrhosis (Liver)	..	11 (182 lbs)	..	..	..	..
Bruised and Infiltrated ..	1 (500 lbs)	..	2 (72 lbs)	..	..	..
Emaciation ..	..	..	1 (30 lbs).	..	..	..
Septicaemia ..	..	..	..	..	1 (112 lbs)	..
Totals ..	3 (1826 lbs)	12 (458 lbs)	3 (102 lbs)	..	1 (112 lbs)	..

The butchers' premises in the Burgh are kept in a thoroughly clean and satisfactory state.

The conditions prevailing in the bakeries in the Burgh are, on the whole, satisfactory. Entirely new premises have recently been erected by the Co-operative Society and these effect a great improvement upon their older establishment, which was commented upon in previous reports.

I—AN ACCOUNT OF PROCEEDINGS UNDER THE RAG FLOCK ACT, 1911.

No matter calling for attention under the above Act arose during the year.

J—A STATEMENT IN SUCH FORM AS THE SCOTTISH BOARD OF HEALTH MAY DIRECT OF HIS PROCEEDINGS DURING THE YEAR.

The information desired by the Scottish Board of Health of the Sanitary Inspector's proceedings during 1926 under the Public Health and other Acts was transmitted to the Board under separate cover and a copy was also transmitted to the Local Authority.

HOUSING.

The progress made during the year with the erection of the houses under the St. Andrews Housing Scheme was satisfactory, and 34 of the 50 houses comprising the Third Development were

completed and occupied. Of this number 14 were four-roomed cottages and 20 were three-roomed flats. The completion of this Development was therefore in an advanced stage at the close of the year. The Fourth Development, which provided for the erection of 24 two-roomed flats, was commenced in January and brought forward steadily throughout the year. Eight of these houses were completed and occupied by Martinmas, and at the close of the year this scheme was also nearing completion. In addition to these Developments, negotiations were entered into for the execution of a Fifth Development, which was to provide for 50 houses. The necessary plans of the buildings and the layout, together with the Schedules of Measurements were prepared. Offers were received, approved by the Town Council and by the Board, and were accepted, and a commencement made with the work of this Development in September last. The Fifth Development provides for the erection of 20 two-roomed flats, 20 three-roomed flats, and 10 four-roomed cottages. Adding together the houses comprising the five developments of the St. Andrews Housing Scheme (including in the Third Development the additional house erected at the Bassaguard Site), provision is made for 243 houses. Of this number 12 contain five rooms, 79 contain four rooms, 108 contain three rooms, and 44 contain two rooms. In addition to these the ten flats in the South Court property and the four flats in the Abbey Court property make the total number of houses controlled by the Town Council to be 257. The following table shows the number of houses under the various developments completed and occupied at the end of the year.

<i>Development.</i>	<i>Houses occupied at end of year.</i>				<i>Houses in course erection.</i>				<i>Totals</i>
	2 rms.	3 rms.	4 rms.	5 rms.	2 rms.	3 rms.	4 rms.	5 rms.	
First Development, ..	Nil	20	36	12	Nil	Nil	Nil	Nil	68
Second Development, ..	Nil	32	18	Nil	Nil	Nil	Nil	Nil	50
Third Development, including additional house at Bassaguard, ..	Nil	20	14	Nil	Nil	Nil	1	Nil	51
Fourth Development, ..	8	Nil	Nil	Nil	16	Nil	Nil	Nil	24
Fifth Development, ..	Nil	Nil	Nil	Nil	20	20	10	Nil	50
Abbey Court and South Court,	5	4	5	Nil	Nil	Nil	Nil	Nil	14

In view of the damage done to many of the tiled roofs during gales, when several houses had considerable portions of the roofs stripped, the Housing Architect was authorised by the Town Council to approach the Board on the question of providing slates on the roofs of the houses in the Fifth Development. Unfortunately, however, the Board could not see its way to grant this request in its entirety, but agreed to three blocks facing west being slated, and recommended that the remainder of the roofs, excepting those covered with the pantile in Lamond Drive, be covered with the Courtrai Tile, and these tiles laid in such manner that every alternate tile is nailed to the fillets with number 14 gauge galvanised wire nails. It is, however, to be regretted that the authority for covering the roofs with slates could not be obtained, owing to the very exposed situations of the houses, and the fact that many wind storms occur. During one severe storm tiles from the roof of one of the houses in Wallace Avenue were blown across the street and through the windows of a house opposite. This instance is quoted in order that some measure of the force of the winds contended with may be had. It further illustrates the serious risk to life when tiles are blown off the roofs, factors which, when added to the cost of repairing the damages, prove the undoubted advantage of slated roofs over tiled roofs in exposed situations.

Another matter of considerable importance to Local Authorities is the class of water closet which it would appear is being supplied for Housing Schemes. It was found that the flooring at the foot of numerous water closets in the Second, Third and Fourth Developments revealed distinct evidence of saturation, after the closets had been in use for a few months. This matter, when detected, was immediately brought to the notice of the contractor, whose maintenance period had, fortunately, not expired. The contractor in turn took the matter up with the manufacturers of the fittings, which resulted in representatives from the manufacturers visiting and examining the closets. One of the representatives admitting that defects existed while the other did not commit himself, both, however, agreed to replace a few of the closets, in order that those removed from the houses might be subjected to porosity tests at the works. Should the testing of the closets prove that the fittings are defective, replacements will be made at their expense. The question of condensation being the

cause of the saturation was put forward, and while this matter is not one upheld by the Officials of the Local Authority, as, in their opinion, the amount of water which collects at the bases of the closets could not result from condensation alone, without prejudicing themselves the Local Authority, were advised by the Architect to have lead safes fitted to the flooring at the foot of each closet. The purpose of these lead safes is to prevent the water which accumulates having access to the wooden flooring which obviously would in time rot and give off offensive odours, factors which would, sooner or later, necessitate flooring to be renewed and create conditions of a serious menace to the health of the inhabitants. Negotiations are still taking place, and will continue until satisfactory conditions are attained. It is to be hoped that the manufacturers of the closets will discover what is the cause of the trouble and provide thereafter satisfactory fittings from a sanitary point of view. The defects in the closets cannot be detected by the eye no matter how closely they may be examined, and the fact that the trouble did not manifest itself until a few months after the closets were in use, will serve to indicate the difficulty which the Local Authorities Officials have to contend with in the matter.

I have the honour to be,

Gentlemen,

Your obedient Servant,

JOHN ROSS, A.R.San.I.,
Sanitary Inspector.